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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,900	09/29/2003	Robert F. Bartfai	TUC920030109US1	4827

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LAW OFFICE OF DAN SHIFRIN, PC - IBM
14081 WEST 59TH AVENUE
ARVADA, CO 80004

EXAMINER

MYINT, DENNIS Y

ART UNIT	PAPER NUMBER
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2162

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/19/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/674,900	BARTFAI ET AL.	
	Examiner	Art Unit	
	Dennis Myint	2162	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to Applicant's Amendment, filed on 07 July 2006.
2. Claims 1-29 are pending in this application. Claims 1, 9, 14, and 22 are independent claims. In the Amendment filed on 07 July 2006, no amendments were amended.

Response to Arguments

3. Applicant's arguments filed on 07 July 2006 have been fully considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106 (IV)(C)(2)((B))((2))(a) and (b) states that :

For an invention to be "useful" it must satisfy the utility requirement of section 101. The USPTO's official interpretation of the utility requirement provides that the utility of an invention has to be (i) specific, (ii) substantial and (iii) credible. MPEP § 2107 and Fisher, 421 F.3d at 1372, 76 USPQ2d at 1230 (citing the Utility Guidelines with approval for interpretation of "specific" and "substantial"). In addition, when the examiner has reason to believe that the claim is not for a practical application that produces a

Art Unit: 2162

useful result, the claim should be rejected, thus requiring the applicant to distinguish the claim from the three 35 U.S.C. 101 judicial exceptions to patentable subject matter by specifically reciting in the claim the practical application. In such cases, statements in the specification describing a practical application may not be sufficient to satisfy the requirements for section 101 with respect to the claimed invention. Likewise, a claim that can be read so broadly as to include statutory and nonstatutory subject matter must be amended to limit the claim to a practical application. In other words, if the specification discloses a practical application of a section 101 judicial exception, but the claim is broader than the disclosure such that it does not require a practical application, then the claim must be rejected.

The tangible requirement does not necessarily mean that a claim must either be tied to a particular machine or apparatus or must operate to change articles or materials to a different state or thing. However, the tangible requirement does require that the claim must recite more than a 35 U.S.C. 101 judicial exception, in that the process claim must set forth a practical application of that judicial exception to produce a real-world result.

Independent claims 1, 9, 14, and 22 are rejected under U.S.C. 101 because The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Any dependent claims which depend on said independent claims 1, 9, 14, and 22, are hereby rejected under U.S.C. 101 because of their dependency on said independent claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claim 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milillo et al., (hereinafter "Milillo") (U.S. Patent Number 6643671) in view of Asselin et al., (hereinafter "Asselin") ("Implementing Concurrent Policy", IBM Document Number GG24-3990-00, December 1993) and further in view of Taylor (U.S. Patent Application Publication Number 2004/0220981).

As per claim 1, Milillo is directed to “a method for protecting consistency groups during a data storage backup operation” (Milillo, Figure 2) and teaches the limitations:

“transferring data updates from a host device” (Milillo, Figure 2: *Host 42*) “to primary PPRC volumes on a primary PPRC unit” (Milillo, Figure 2: *Source Volume 52*) (Also note Milillo, Column 7 Line 1-25);

“upon the primary PPRC volumes forming a consistency group, transferring the primary PPRC volumes to FlashCopy source volumes on a secondary PPRC unit” (Milillo et al. Figure 2, “Primary Target Volume” 54);

and “committing a FlashCopy operation of the consistency group from the FlashCopy source volumes to corresponding FlashCopy target volumes” (Milillo, Figure 2: *Secondary Volume 56* and Milillo, Column 7 Line 44-63).

Note that Milillo recites that *It should be noted that Fig. 2 depicts a single PPRC volume pair (primary target volume 54 and secondary volume 56) and a single source volume 52 for the sake of simplicity only. As those of ordinary skill will appreciate, additional volume pairs and source volumes may also be included.* Thus, in the method and system of Milillo, additional volumes can be placed on both primary and secondary systems and Primary Target Volumes of Milillo et al. (Milillo et al. Figure 2, Primary Target Volume 54) could be PPRC Primary Site Storage Volumes of the claimed invention (Specification of the claimed invention, Figure 1, PPRC Primary Site Storage Volumes 116).

Milillo does not explicitly teach the limitations: “attempting to prepare each FlashCopy source volume for a FlashCopy operation, including imposing a write-inhibit

indicator on a FlashCopy source volume”, “if the preparation of all FlashCopy source volumes is successful” and “reverting the FlashCopy operation if the preparation of any FlashCopy source volume is unsuccessful, whereby the prior consistency group is maintained in the FlashCopy target volumes”.

On the other hand, Asselin teaches the limitation:

“attempting to prepare each FlashCopy source volume for a FlashCopy operation, including imposing a write-inhibit indicator on a FlashCopy source volume” (Asselin, Page 2-3). Asselin teaches a method of concurrent copy where in source is not available for access for a short period of time while concurrent copy process initialized (Asselin et al. Page 2, i.e., *when you use concurrent copy, application processing is interrupted only for a short period while the system initializes the concurrent copy environment* and Page 3, i.e., *The system serializes access to the data being dumped or copied long enough for the concurrent copy session to be initialized*). It is inherent in the method of concurrent copy as taught by Asselin that write-inhibit indicators are imposed during the initialization period of the concurrent copy process.

In addition, Taylor teaches the limitation:

““if the preparation of all FlashCopy source volumes is successful” (Taylor, Paragraph 0040, i.e., *if the online backup preparation was successful*)” and

“reverting the FlashCopy operation if the preparation of any FlashCopy source volume is unsuccessful, whereby the prior consistency group is maintained in the FlashCopy target volumes” (Taylor, Paragraph 0040, i.e., *However if the online backup*

preparation was not successful, then the system attempts to return to database accessibility by releasing the database from online backup operation).

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the method of Milillo et al. for data copying using consistency groups with the methods of Asselin and Taylor so that, in the combined method, write operations on source consistency group volumes would be made unavailable by way of using write-inhibitors (i.e. preparing the consistency groups for FlashCopy) and mirroring/copying/updates between the consistency group volumes (FlashCopy operations) would be committed if preparations of consistency groups are successful and reverted if said preparation is not successful. One would have been motivated to do so in order to “reduce the amount of time that is required to back up application data, hence increasing the time available for online service” (Asselin et al., Page 2 Second Paragraph) and to “*provide a safe and effective backup*” (Taylor, Paragraph 0015).

Referring to claim 2, the method and system of Milillo in view of Asselin and further in view of Taylor as discussed above with regard to claim 1 discloses the invention as claimed. Particularly, Asselin in view of Taylor teaches the limitation:

“wherein a write-inhibit indicator is operable to prevent the reception of data updates by the FlashCopy source drive transmitted from the PPRC source device during a FlashCopy operation” (Asselin, Page 2-3 teaches write-inhibitors and Taylor, Paragraph 0040, i.e., *However if the online backup preparation was not successful, then*

the system attempts to return to database accessibility by releasing the database from online backup operation).

Referring to claim 3, the method and system of Milillo in view of Asselin and further in view of Taylor as discussed above with regard to claim 1 discloses the invention as claimed. It is inherent in the method and system of Milillo in view of Asselin and further in view of Taylor that write-inhibitors would be released if the preparation of all FlashCopy source volumes is successful and, as such, teaches the limitation:

“further comprising releasing the write-inhibit indicators if the preparation of all FlashCopy source volumes is successful” (Asselin, Page 3, i.e. “After logical completion, the data is once again available for unrestricted application access; and Taylor, Paragraph 0040, i.e., *if the online backup preparation was successful*).

Referring to claim 4, Milillo in view of Asselin and further in view of Taylor teaches the limitation:

“wherein the step of preparing each FlashCopy source volume for a FlashCopy operation comprises generating an Establish-FlashCopy-Revertable command” (Taylor, Figure 10: 222 *Release Database from Online Preparation* and Paragraph 0042, i.e., *the Release stage*).

Referring to claim 5, Milillo in view of Asselin and further in view of Taylor teaches the limitation:

“wherein the step of committing the FlashCopy operation comprises generating a Withdraw-FlashCopy-commit command” (Taylor, Paragraph 0040, i.e., *if the online backup preparation was successful* and Paragraph 0040, i.e., *However if the online backup preparation was not successful, then the system attempts to return to database accessibility by releasing the database from online backup operation*).

Referring to claim 6, Milillo in view of Asselin and further in view of Taylor teaches the limitation:

“wherein the step of reverting the FlashCopy operation comprises generating a Withdraw-FlashCopy-revert command” (Taylor, Paragraph 0040, i.e., *if the online backup preparation was successful* and Paragraph 0040, i.e., *However if the online backup preparation was not successful, then the system attempts to return to database accessibility by releasing the database from online backup operation*).

As per claim 7, Milillo in view of Asselin and further in view of Taylor teaches the limitation:

“the method further comprises deciding after an attempt to prepare each FlashCopy source volume whether the preparation is successful; and the reverting step comprises reverting the FlashCopy operation following any unsuccessful preparation” (Taylor, Paragraph 0040, i.e., *if the online backup preparation was successful* and Paragraph 0040, i.e., *However if the online backup preparation was not successful, then*

Art Unit: 2162

the system attempts to return to database accessibility by releasing the database from online backup operation).

Claim 8 is rejected on the same basis as claim 7.

Claim 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, and 29 are rejected on the same basis as claim 1, 2, 3, 7, 8, 1, 2, 3, 4, 5, 6, 7, 8, 1, 2, 3, 4, 5, 6, 7, and 8.


Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Myint whose telephone number is (571) 272-5629. The examiner can normally be reached on 8:30AM-5:30PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Myint
Examiner
AU-2162


JOHN BREENE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100